

Recent Bank Written Math Solution

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Recent Bank Written Math Collection:

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Bangladesh Krishi Bank Senior Officer (20-01-2017)

1. A man deposits 5000 tk at 5% annual interest for six months. In every six months he withdraws tk 500 from his principal plus interest earned. What is the total amount of interest he received?

Solution: Semi annual, so Interest rate = $5/2\% = 2.5\%$

Total Interest = $2.5\% * 5000 + 2.5\% * 4500 + 2.5\% * 4000 + 2.5\% * 3500 + 2.5\% * 3000 + 2.5\% * 2500$
 $+ 2.5\% * 2000 + 2.5\% * 1500 + 2.5\% * 1000 + 2.5\% * 500$

$= 2.5\% * 27500$

$= 687.5 \text{ Tk.}$

2. A man interest and wages from his investment tk 5000. If he invests double then the wages increased 50% and total amount is tk 8000. What is his actual income in terms of wages and interest?

Solution:

Let, Investment be X and Wages be Y

ATQ.

$$X + Y = 5000 \dots(i)$$

$$2X + 1.5 Y = 8000 \dots(ii)$$

Now, $2*(i) - (ii) \Rightarrow$

we get,

$$x = 1000 \text{ and } Y = 4000$$

Ans: Investment = 1000 and wages = 4000

3. 20 men can finish a work in 30 days. After how many days can 5 persons leave the work and the remaining work can be finished in 35 days?

Solution:

20 men can do in 30 days

$$1 \text{ man can do } 30 * 20 = 600$$

Let,

20 men can do in X days

1 man can do in 20 days

Again,

$20 - 5 = 15$ men can do in $35 - X$ days

1 man can do in $15(35 - x)$ days

ATQ,

$$20x + 15(35 - x) = 600$$

$$X = 15 \text{ (Ans)}$$

4. A man goes to his office at a certain time. If his walking speed is 5 km/h then he is 7 minutes late. When his speed is 6 km/h he reaches 5 minutes before. How far is his office from his house?

Solution:

Let, total distance be X km

ATQ,

$$x/5 - 7/60 = x/6 + 5/60 \text{ [Time = distance/Speed]}$$

$$x = 6 \text{ km}$$

5. In a mixture the ratio of apples, peaches and grapes is 6:5:2. If the total mixture is 39 pounds then what is the difference between apples and grapes?

Solution:

Let, Apple, Peaches and Grapes $6x$, $5x$ and $2x$ respectively.

$$\text{Apple} = 39 * (6x/13x) = 18$$

$$\text{Grapes} = 39 * (2x/13x) = 6$$

$$\text{Difference} = 18 - 6 = 12 \text{ (Ans)}$$

Sonali Bank Limited Officer (IT) (23-12-2016)

1) The salaries of Lamia and Farzin are in the ratio 7:5 and the total of their salaries is Tk 12000. If their annual increments are Tk 200 and Tk.150 respectively, what will be the ratio of their salaries after one year?

Solution:

Let,

$$L = 7x$$

$$F = 5x$$

A/Q,

$$7x + 5x = 12000$$

$$12x = 12000$$

$$x = 1000$$

So,

$$7x = 7 * 1000 = 7000$$

$$5x = 5 * 1000 = 5000$$

$$\text{Now, required ratio} = (7000 + 200) : (5000 + 150)$$

$$= 7200 : 5150 = 144 : 103$$

Answer: 144:103

2) A man goes upstream at 10 km/hr to a place and back down stream to same point at 6 km/ hr. what is the average speed in the journey?

Solution:

$$\text{Average speed} = (2 * 6 * 10) / (10 + 6) = 7.5$$

Ans : 7.5 km/hr

3) A man is standing on a railway bridge which is 180 m long. He finds that a train crosses the bridge in 20 seconds but himself in 8 seconds. Find the length of the train.

Solution:

let, length of the train x

now,

$$x/8 = x + 180/20 \text{ (Considering, Speed equal in both case)}$$

hence solving equation

$$x = 120$$

$$\text{speed} = 120/8 * 18/5 = 54$$

Ans : 120 m and 54 kmph

4) The sum of ages of the Father and Son is 50 years. when the ages of the son will be equal to the present age of the father, the sum of their ages will be 102 years. Find the age of Father and Son?

Solution:

Let,

$$\text{Age of Father} = X$$

$$\text{Age of Son} = x - 50$$

Again,

$$\text{When age of son will } x, \text{ the age of father will } = x + (X - (50 - x)) = 3x - 50$$

Now,

$$3x - 50 + x = 102$$

$$x = 38$$

$$\text{Father's age} = 38$$

$$\text{Son's age} = 50 - 38 = 12$$

5) By selling a table for tk 39, gain is as much as percent as its cost. What is cost price?

Solution:

Suppose,

Cost price = x

Gain = x%

atq,

$$x + x\% \text{ of } x = 39$$

$$x + \frac{x^2}{100} = 39$$

$$100x + x^2 = 3900$$

$$x^2 + 100x - 3900 = 0$$

$$x^2 + 130x - 30x - 3900 = 0$$

$$(x + 130)(x - 30) = 0$$

$$x = -130 \text{ (price can't be negative)}$$

$$\text{or, } x = 30$$

Ans: 30 taka

United Commercial Bank Limited Probationary Officer - 2017(17-02-2017)

1: Mr X asked to construct a road of 1920 meters in 120 days. He appointed 160 workers and find that in 24 days only $\frac{1}{8}$ portion of work has been finished. How many additional number of workers would be needed in order to completing the whole work in time?

Solution:

$$\text{Remaining work} = 1 - \frac{1}{8} = \frac{7}{8}$$

$$\text{Remaining number of days} = 120 - 24 = 96$$

$$\text{to do } \frac{1}{8} \text{ of the work in 24 days, he needs} = 160 \text{ workers}$$

$$\text{to do } \frac{7}{8} \text{ of the work in 24 days, he needs} = 160 \times 7 \text{ workers}$$

$$\text{to do } \frac{7}{8} \text{ of the work in 96 days, he needs} = 160 \times 7 \times \frac{24}{96} \text{ workers} = 280 \text{ workers.}$$

$$\text{additional workers needed} = 280 - 160 = 120.$$

ans: 120.

2: The simple interest on a sum of money will be Tk.600 after 10 years. If the principal is trebled after 5 years will be the total interest at the end of the tenth year?

Solution: Interest of 10 years = 600 tk

$$\text{interest of 1 year} = \frac{600}{10} = 60 \text{ tk}$$

if the principal is trebled, the interest will also be trebled.

So, total interest in 10 years = (interest in first 5 years) + (interest in next 5 years) = $(60 \times 5) + (60 \times 5 \times 3) = 1200$ tk

ans: 1200 tk.

Bangladesh Bank Assistant Director(General Side) (17-02-2017)

1.A man sells an article at a profit of 25% if he had bought it 20% less and sold it for Tk. 10.50 less he would gained 30%,find the cost price of the article?

Solution:

Let The C.P be Tk. x

Then $S.P = x + x \times 25\% = 1.25x$

When C.P 20% reduced, new cost $= x - x \times 20\% = 0.80x$

New $S.P = 0.80x + 0.80x \times 30\% = 1.04x$

ATQ,

$$1.25x - 1.04x = 10.50$$

$$x = 50$$

2.A and B can do a piece of work in 18 days,B and C can do it in 24 days.A and C can do it in 36 days.In how many days will A,B and C finish it together and separately.

Solution:

By adding,we get

$$\text{In 1 day } 2(A+B+C)\text{work} = (1/18 + 1/24 + 1/36) = 1/8 \text{ portion}$$

$$\text{In 1 day } (A+B+C) = 1/16$$

So A,B and C together can finish the work 16 days.

$$\text{In 1 day A work} = (A+B+C) - (B+C) = 1/16 - 1/24 = 1/48$$

A alone can finish the work 48 days

$$\text{In 1 day B work} = (A+B+C) - (A+C) = 1/16 - 1/36 = 5/144$$

B alone can finish the work 144/5 days

$$\text{In 1 day C work} = (A+B+C) - (A+B) = 1/16 - 1/18 = 1/144$$

C alone can finish 144 days.

Ans: A=48 days,B=144/5 days,C=144 days

Sonali Bank Senior Officer IT (09-12-2016)

1.A boat takes 3 hours to travel to a certain distance with the stream and return to the original place in 5 hours.How long will it take to travel the same distance in stationary water?

Solution:

Let, The speed of the boat in stationary water is P kmph

The rate of the stream is Q kmph and the distance is D km

$$\text{Atq, } p+q=D/3 \dots\dots\dots (i)$$

$$\text{and } p-q=D/5 \dots\dots\dots (ii)$$

$$(i)+(ii)$$

$$2p=8D/15$$

$$p=4D/15$$

So, required time to cover the distance in stationary water is $=D/p=15/4=3 \text{ hrs } 45 \text{ min}$

Ans: 3 hours 45 Min

2.A man has TK.300000.He invests a part of amount at 8% and the remaining amount at 10% p.a.At the end of the year he earns a profit of TK.25600 from his entire investment.Find the amount he invested under each rate.

Solution:

Let In 8% he invested TK.=x

10% he invested Tk=(300000-x)

Atq,

$$x*8*1/100+(300000-x)*10*1/100=25600$$

$$x=220000$$

So he invested Tk.220000 at 8%

and Tk. (300000-220000)=80000 at 10%

Ans: 220000TK, 80000TK

3.Mashrsfee purchased a 30 inch-TV which height was 18 inch.If the size of a TV is expressed as the lengths of its diagonal,find the width of the TV Mashrsfee purchased?

Solution:

Let, The width of the TV is =p inches

$$\text{ATQ, } p^2 + 18^2 = 30^2$$

$$p = 24$$

Ans: 24 inches

4. The ratio of the girls and the boys in a class was 2:5. If two new girls join the class, the ratio becomes 1:2. What was the total number of students in the class?

Solution:

Let, The number of girls in the class was =2x

and the number of boys in the class was =5x

The total number of students in the class was =2x+5x=7x

Atq,

$$2x + 2 : 5x = 1 : 2$$

$$x = 4$$

So, The total number of students in the class was =7*4=28

Ans: 28

5. How many liters of 15% salt solution must be added to 5 liters of 8% salt solution to get a 10% salt solution?

Solution:

Let, x liters of 15% should be added

Atq

$$(0.15 * x + 5 * 0.08) / (x + 5) = 0.10$$

$$x = 2$$

Ans: 2 liters.

Janata Bank EO (Electrical)-2017

A lamp is manufactured to sell for \$35.00, which yields a profit of 25% of cost. If the profit is to be reduced to 15% of cost, what will be the new retail price of the lamp?

Solution:

Let, the C.P of the lamp is \$100

Now, at 25% profit the S.P = $\$(100 + 25) = \125

If S.P \$125 then C.P = \$100

If S.P \$35 then C.P = $\$100 \times 35 / 125 = \28

Again, at 15% profit The S.P or Retail Price = $\$(100 + 15) = \115

If C.P \$100 then retail price = \$115

If C.P \$28 then retail price = $\$115 \times 28 / 100 = \32.20

Ans: The new retail price of the lamp will be \$32.20

Janata Bank EO (Civil)-2017

The price of a balcony seat in a theater is $\frac{1}{3}$ of the price of a seat in the orchestra. When the theater is completely sold out, the total receipts from the 600 orchestra seats and the 450 balcony seats are \$4500. What is the price of one orchestra seat?

Solution:

Since the price of a balcony seat in a theater is $\frac{1}{3}$ of the price of a orchestra seat.

So, let the price of a seat in the orchestra = \$x

The price of a balcony seat = $\$x \times \frac{1}{3} = \frac{\$x}{3}$

Atq,

$$(600 \times x) + (450 \times \frac{x}{3}) = 4500$$

$$x = 6$$

Ans: The price of one orchestra seat is \$6.

Thankyou..... Thankyou Thankyou

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